

**NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF AVIATION SAFETY
WASHINGTON, D.C.**

Errata/Addenda to Survival Factors Group Chairman's Factual Report

Accident:	DCA99MA060
Location:	Little Rock, Arkansas
Date:	June 1, 1999
Operator:	American Airlines
Time:	2351 Central Daylight Time (CDT)
Aircraft:	McDonnell Douglas MD-82, N215AA

Errata

1. Exhibit 6A, page 3, 1.0 Aircraft Configuration, third sentence; change: "A single forward-facing flight attendant jumpseat was located in the aft galley at the 2L exit," to "A single aft-facing flight attendant jumpseat was located in the aft galley at the 2L exit."
2. Exhibit 6A, page 5, first paragraph, third sentence; change to: "The third segment departed ATL at 1817 EDT and arrived in DFW at 2100 CDT."
3. Exhibit 6A, page 5, second paragraph, second sentence, change to: "The first segment departed DFW at 1652 CDT and landed in Amarillo (AMA) at 1800 CDT."
4. Exhibit 6A, Page 11, 3.1 Passenger Interviews, line 3; change: "109" to "110."
5. Exhibit 6A, page 27, seat 22F, line 7; change: "deceleration," to "acceleration."
6. Exhibit 6A, page 32, seat 30F, line 4; change: "8" to "80."
7. Exhibit 6A, page 48, paragraph 2, delete: "Five battery packs were removed from the airplane wreckage, and will be tested for function. The results will be added to this report."
8. Exhibit 6A, page 48, remove table "Battery Control Modules Removed from N215AA," and title.
9. Exhibit 6A, page 55, 8.0 Passenger Evacuation; change: "The No. 1 flight attendant followed the passenger carrying the No. 3 flight attendant out of the airplane through a hole on the left side of the airplane, in the first- class section," to "The No. 1 flight attendant evacuated the airplane through a hole on the left side of the airplane, in the first- class section."

10. Exhibit 6G, Injury Chart, page 11, First Officer, Injuries; change: “Comminuted mid-femoral fracture with 4 cm overlap,” to “Comminuted mid-shaft fracture of the left femur with 4 cm overlap.”

11. Exhibit 6H, Passenger Questionnaires, Cover Sheet; change: “1039 pages” to “1050 pages.”

Addenda

1. Exhibit 6H, add pages 1040 through 1050.

2. Exhibit 6A, page 48, paragraph 2, after sentence 1, insert the following:

“All but five battery/control units from the overhead and floor emergency lighting systems were destroyed by post-accident fire. The five remaining battery/control units were removed from the airplane wreckage and tested at American Airlines facilities at Alliance Airport and Tulsa. The battery/control units were subjected to the manufacturers’ recommended procedures for battery charging, circuit switching, and battery discharge under load. All battery/control units functioned normally, except one (of two) battery in Grimes unit 27432/24569 could not be charged. The battery/control unit functioned normally, except produced approximately one-half normal voltage.”

3. Exhibit 6A, page 48, after second paragraph, insert the following table and title:

Battery/Control Modules Removed from N215AA

Manufacturer	Model Number	Part Number	Location	Date Removed	Serial Number
DME Corporation	UPU-301 Control Module Electronics Module	P4-01-0049 P4-01-0051-101 P4-01-0049-101	FS 237.25	7/22/99	11481
Grimes	Battery Power Supply	60-0304-51	FS 386, ceiling, right side	8/19/99	23375 29578
Grimes	Battery Power Supply	60-0304-51	FS 500, ceiling, right side	8/19/99	27432 24569
Grimes	Battery Power Supply	60-0304-51	FS 211, ceiling, center	8/19/99	15990 22279
Grimes	Battery Power Supply	60-0304-51	FS 672, ceiling, right Side	8/19/99	24251 21629

NATIONAL TRANSPORTATION SAFETY BOARD

Washington D.C. 20594

PASSENGER QUESTIONNAIRE

29.07.8

The mission of the National Transportation Safety Board is to prevent accidents and save lives in transportation. We are tasked with investigating transportation accidents, determining the probable cause, and making recommendations to prevent them from happening again. One of the tools the Board uses to complete its mission is safety studies. This questionnaire is voluntary and anonymous. The form should require approximately 20 minutes of your time. This form is required to display a currently valid OMB control number. If you should have any questions about any aspects of this questionnaire or its use please feel free to contact the NTSB at 202-314-6516. Thank you for your assistance.

Safety Briefing

1. How were the preflight safety instructions presented? (Check all that apply)

- Flight Attendant Video Audio I do not remember

2. How much of the preflight Safety Presentation did you watch?

- All 75% 50% 25% None that I remember

(If All go to question 4)

3. Indicate why you did not watch the whole presentation (check all that apply).

- Seen it before Obstructed view Distracted by child Distracted by other person It's basic knowledge Listening to music/audio tapes Reading Sleeping Too long

Other I AM A PLATINUM FLYER AND HAVE SEEN IT MANY TIMES - ALSO, I WAS TIRED AND ANXIOUS BECAUSE OF VERY LATE (DELAYED) FLIGHT

4. How well could you hear the presentation?

- Heard every word Some words difficult to hear Most words difficult to hear N/A

5. Is English your primary language?

- Yes No

6. Did the pre-flight safety presentation help during the evacuation?

- Yes No N/A

Explain:

7. Was the pre-flight briefing presented in a manner that indicated the importance of listening to the briefing?

- Yes No I DONT RECALL

Explain:

8. When did you read the safety instruction card in the seatback in front of you?

- Prior to flight During pre-flight briefing In-flight Did not read

If you read the safety card skip to item 10

9. Why did you not read the safety card?

- Read it before
- Could not find
- Was not there
- Could not understand
- Not important
- Other _____

10. Did the safety card information help you in the evacuation?

- Yes
- No

Explain: I WAS UNCONSCIOUS

11. What changes would you recommend to improve the safety instructions? (Either the presentation or safety card)

I would recommend flight attendants present in a more serious way to underscore importance (often they remind me of bored runway models going through paces)

Impact Information

- The severity of the impact(s) and/or the manner in which the aircraft came to a stop was:

- Nothing unusual
- Like a very hard landing
- Extremely violent

Please describe:

I recall the impact, the feel and crushing sound then the bulkhead coming toward me, then that's all.

- Did you assume a brace position as demonstrated on the safety instruction card?

- Yes
- No

Explain:

I put my hands in front of me and wondered if I should "assume the position" but was unsure if we were going to crash

- In which direction were you thrown during the impact(s)?

- Forward
- Rearward
- Up
- Down
- Right
- Left
- Don't know

- What happened to your seatbelt?

- Remained Intact
- Opened/ separated
- Don't Know

according to passenger who brought me out of plane

- Did your seatbelt cause any bruises or injuries?

- Yes
- No

If yes, describe location and nature of injuries:

left side between breast and navel

- What happened to your seat?

- Remained Intact
- Came partially loose
- Broke free
- Don't know
- Other

Describe:

Emergency Exits

12. When did you look for the emergency exit(s) closest to your seat?
 During boarding During the pre-flight briefing After the preflight briefing but before the evacuation
 During the evacuation *did not look - I was unconscious or semi unconscious.*
13. Where did you look for an exit? (Check all that apply)
 In front of me Behind me Left of me Right of me *N/A*
14. Prior to the evacuation did you count the number of rows from your seat to an emergency exit?
 Yes No
15. Were you seated in an emergency exit row?
 Yes No If no skip to item 19
16. Did you receive any pre-flight instructions on your responsibilities in case of an evacuation?
 Yes No
17. Did you receive a personal briefing by a flight attendant on your emergency exit responsibilities?
 Yes No
18. Did you read the instructions on operating the exit?
 Yes No
19. Did you open an exit yourself?
 Yes No If no, skip to item 24
20. What caused you to open the exit?
 Flight attendant P.A. announcement Personal assessment Other _____
21. Did you have any difficulties opening the exit?
 Yes No
Explain: _____
-
22. Did you use this exit?
 Yes No
23. Did you open the exit while the aircraft was moving?
 Yes No
24. When did you decide which exit to use?
 Before the evacuation order was given As I left my seat As I traveled down the aisle
 Other *N/A I did not make decision for myself*
25. For what reasons did you choose this exit? (Check all that apply)
 I was called to the exit I was directed by cabin staff It was the only available exit
 The other exit was blocked I followed other passengers It was the closest exit
 Other *N/A*
26. Were you directed away from a specific exit?
 Yes No
27. Were you directed toward a specific exit?
 Yes No
28. Did you follow these directions?
 Yes No *N/A no directions were given that I heard*

29. Did you pass a usable exit at the direction of a flight attendant?

Yes No

30. Did you select an exit and then change your mind?

Yes No

If yes, explain _____

31. If you used an over-wing exit, how did you get off the wing?

Inflatable slide Slid down back of wing Jumped off front of wing Not Applicable
 Other N/A

32. If you used an over-wing exit, did you place the exit door inside the aircraft?

Yes No Not Applicable

33. If you used an over-wing exit, did you see any arrows indicating direction to get off the wing?

Yes No Not Applicable

Carry-on Baggage

34. Did you have carry-on baggage (count purse, computers, backpack etc. each as one item)?

No one bag 2 bags 3 bags more than 3 bags

35. Did you have to gate check a bag you were planning to carry on?

Yes No

36. Where did you store your:

Purse: Under seat Overhead bin Closet Other _____
Briefcase: Under seat Overhead bin Closet Other _____
Computer: Under seat Overhead bin Closet Other _____
Suitcase 1: Under seat Overhead bin Closet Other _____
Suitcase 2: Under seat Overhead bin Closet Other _____

37. Did you attempt to take any carry-on items with you during the evacuation?

Yes No

If no skip to item 42

38. What items did you need to take?

Medicines Money/wallet/credit cards Car/House key Clothes Camera Computer
 Job related items Sentimental items Other _____

39. Where were the items stored?

Under seat Overhead bin Closet Other _____

40. What happened to any carry-on bags you took with you during the evacuation?

Taken by flight attendant Placed in a seat Returned to overhead bin
 Dropped to floor Carried down slide/out wing Other _____

41. Did other passengers attempt to take carry-on items with themselves?

Yes No

42. Did passengers retrieving carry-on luggage slow the evacuation?

Yes No I do not know. did not observe

43. Did passengers argue with flight attendants over retrieving carry-on luggage during the evacuation?

Yes No *I did not observe*

Emergency Slides

44. Did you use an evacuation slide?

Yes No *If No, skip to item 52*

45. Was a flight attendant at the doorway giving directions?

Yes No

46. Did you hesitate before getting on slide?

Yes No *If no skip to item 49*

47. Why did you hesitate? (Check all that apply)

Did not know what to do Concerned about injury Concerned about landing on another person
 Concerned slide might deflate Concerned about going over side of slide Afraid of heights
 Slide looked too steep Other _____

48. How did you get on the slide?

Jumped Sat down then slid Was pushed by another person

49. What happened at the bottom of the slide? (Check all that apply)

Landed on feet Landed on feet and tumbled over Landed on backside Landed on another passenger
 Another passenger landed on me Someone caught me Other _____

50. Did anyone give you instructions at the bottom of the slide?

Yes No

51. If yes, who gave you instructions?

Crewmember Fire fighter Another passenger Other _____

Passenger Behavior

52. Did you experience any delay in getting into the aisle?

Yes No

If yes, describe *I was unable to move on my own power*

53. Did you bump your head on the overhead bins?

Yes No *The overhead bin fell on me and hit my head*

If yes, how did this affect your ability to evacuate the aircraft? *probably - my neck was*

broken and I was unconscious

54. Did you climb over any seats during the evacuation?

Yes No

55. Did you see anyone climb over the seats?

Yes No

56. Did you see any passengers pushing other passengers?

Yes No

57. Did you get pushed?

Yes No

58. Did you push anyone?

Yes No

59. Were there any disputes among passengers during the evacuation?

Yes No Don't know

60. Did you have to wait behind slow moving passengers (i.e. was the passenger in front of you moving slower than the line to the exit)?

Yes No

If yes, explain why they were moving slowly.

61. Did you consider another exit because of slow moving lines?

Yes No *N/A*

62. Were you traveling with anyone?

Yes No If no skip to item 67

63. With whom were you traveling? (Check all that apply)

Spouse Baby (Under 2 yrs.) Young child (2-10 yr.) Coworker Friend Other _____

64. If you were traveling with a child, were you using a child safety seat?

Yes No

65. Were you seated with your companion(s)?

Yes No

66. Did you evacuate with your traveling companion(s)?

Yes No

67. What proportion of your evacuation was spent on: (Please indicate what percent of your time during the evacuation was spent on the following activities: The total should add to 100%)

Getting out of your seat (including unfastening seat belt)
+ Moving from seat row into aisle
+ Coordinating with traveling companions
+ Retrieving carry-on luggage
+ _____ Moving up/down aisle
+ _____ Moving from aisle to exit
+ Opening exit (Zero if exit already open)
+ _____ Moving through exit
+ Getting off wing (Zero if you did not use a wing exit)
= 100% Total evacuation time

I cannot divide my time because someone was carrying me and I was semi-conscious

68. Did any of the following slow your movement during the evacuation? (Check all that apply)

Seat tray Seatback in front of you Galley Bulkhead (Walls dividing cabin into sections)
 Flight attendant seats Galley items (Soda cans, carts) Luggage fallen from overhead bins
 Luggage passengers tried to take off plane Footrest Child Safety Seat Shoes Blankets
 Headsets Broken cabin interior Overhead bins Curtains
 Other _____

69. Other passengers in general were cooperative during the evacuation.

Strongly Disagree Disagree Neutral Agree Strongly Agree

70. My physical size assisted me in the evacuation.

Strongly Disagree Disagree Neutral Agree Strongly Agree

71. My physical condition assisted me in the evacuation.

Strongly Disagree Disagree Neutral Agree Strongly Agree

72. My age assisted me in the evacuation.

Strongly Disagree Disagree Neutral Agree Strongly Agree

Seat Belt Usage

73. Was your seat belt fastened prior to the evacuation?

Yes, Very Tight Yes, Moderately Tight Yes, Loose No Can't recall

74. Did you have any difficulties unfastening your seat belt?

Yes No *I believe it came open on its own*

75. Did unfastening your seat belt slow down your evacuation of the aircraft?

Yes No Seatbelt was not buckled at time of evacuation

Environment

76. Was there smoke in the cabin?

Yes No If no skip to question 79

77. What was the intensity of the smoke?

Light Medium Heavy

78. Were persons crawling or bent over to get below the smoke layer?

Yes No *I did not observe*

79. Did you notice the lights marking the exits?

Yes No

80. What was the position of the aircraft?

Upright Inverted On its side Steep incline/decline

Communication

81. Who first informed you an evacuation was necessary?

Pilot Flight Attendant Other Passenger Personal Decision *I heard someone yelling "everybody out, the plane is going to burn" - a passenger*

82. At the time, did you know why an evacuation was necessary?

Yes No *I knew we had crashed*

83. Did the flight attendants give you any instructions just prior to the evacuation?

Yes No Not enough time *None that I heard*

84. Did the flight attendants go through the cabin prior to landing to prepare for the evacuation?

Yes No Not enough time

85. Did you hear the flight attendants giving evacuation instructions during the evacuation?

Heard every word Some words difficult to hear Most words difficult to hear Heard nothing

86. Did you understand the flight attendants' instructions?

Yes No *N/A*

87. Did you remove your shoes during the evacuation?

Yes No *If no skip to item 89*

88. Why did you remove your shoes?

Flight attendant instructions I thought I had to Saw others removing shoes Other _____

89. How did the crew aid in your evacuation? (Check all that apply)

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- No aid
 Indicated the exits in use
 Shouted instructions
 Directed passengers out exits
 Assisted passengers from seat to aircraft exits
 Opening exits
 Other _____
That I observed

90. Did the crew assign you any duties (e.g., assist at the bottom of the slide)?
 Yes No

If yes, what were you asked to do and did you do the task.

Injury

91. Did you sustain any injuries prior to the evacuation?

Yes No

If yes, describe the injuries, how they occurred and the effect they had on your evacuation

major cuts, bruises, broken neck, head injury - I was made unconscious and it took a long time to go out because I could not move my arms and legs although I was trying with all my might

92. Did you sustain any injuries during the evacuation?

Yes No *that I know of*

If yes, describe the injuries, how they occurred and the effect they had on your evacuation

I was terrified I would be trapped in the burning plane

93. Did you sustain any injuries after the evacuation?

Yes No *??*

If yes, describe the injuries, how they occurred and the effect they had on your evacuation

no injuries per say, just poison ivy and fire ant bites, also chills from being in a storm for over 45 min. my temp was 93° in the ER when I was admitted

94. Describe the location of injuries suffered?

Wrist
 Ankle
 Legs
 Arms
 Back
 Face
 Head
 Other *NECK, KNEE, THIGH, THUMB, PAW*

95. Description of injuries suffered? (Check all that apply)

Sprain
 Fracture
 Concussion
 Broken Back
 Dislocation
 Strain
 Burn
 Abrasions (Lacerations & Bruises)
 Smoke inhalation
 Other *Jammed thumb, blow to right side and back of head*
Saw did not line up (teeth were not together in normal bits)

Post Evacuation Events

96. What did you do once you exited the plane?

I ran away from the airplane
 I waited for friends/family to exit
 I was assisted away from the plane
 I assisted other passengers in their evacuation
 I waited near plane for help to arrive
 Other

97. Did you notice any exterior aircraft lights illuminated?

Yes No

98. Were crewmembers or rescue personnel directing passengers on where to gather?

Yes No

99. Did all passengers meet at an area away from the airplane?

No, passengers were scattered
 No, the passengers gathered at airplane
 No, only a few passengers were grouped away from aircraft
 Yes, passengers met away from the aircraft

100. How did you leave the site of the evacuation?

Walked to terminal Bussed to terminal Ambulance to hospital Other _____

Your Location

The attached diagram on the last page shows the floor plan of the aircraft.
The doors and exits are indicated by large arrows.

101. Seat Number 9B

Please indicate the following locations on the diagram.

If you know your exact seat position, place an "X" on that seat.

If you are NOT SURE of your seat position place a question mark on that seat.

Position of other known passengers (by name or description).

Show your route of escape (draw line from your seat to exit used).

Indicate the empty seats in your vicinity by placing "E" on that seat.

Use this floor diagram for any other information you consider important such as location of fire in the cabin, breaks or holes in the fuselage or cabin wall, etc.

Personal Information

102. Have you ever had to evacuate an aircraft before?

Yes No

103. Age 38

104. Height 5' 9"

105. Weight 175

106. Gender

Male Female

107. Do you wear corrective lenses?

Yes No

108. Were you wearing your corrective lenses during this flight?

Yes No N/A

109. Did you lose your corrective lenses during the event that caused the evacuation?

Yes No N/A

110. Had you consumed any alcohol in the 8 hours prior the evacuation?

Yes No

111. Prior to departure, was your ability to evacuate affected by any of the following:

Vision Hearing Age Injury Recent surgery Cane

Other NONE

112. How often do you travel by air?

First flight Less than 1 flight per year 1 to 2 flights per year 3 to 6 flights per year

More than 6 flights per year 50-60 FLIGHTS PER YEAR

113. Aviation Experience

Commercial Pilot Private Pilot Flight Attendant Aviation Mechanic

Other _____ None

American Airlines
 Flight 1420
 Little Rock, Arkansas
 June 1, 1999
 McDonnell Douglas MD-82

NAME KRISTINE SHERIDAN

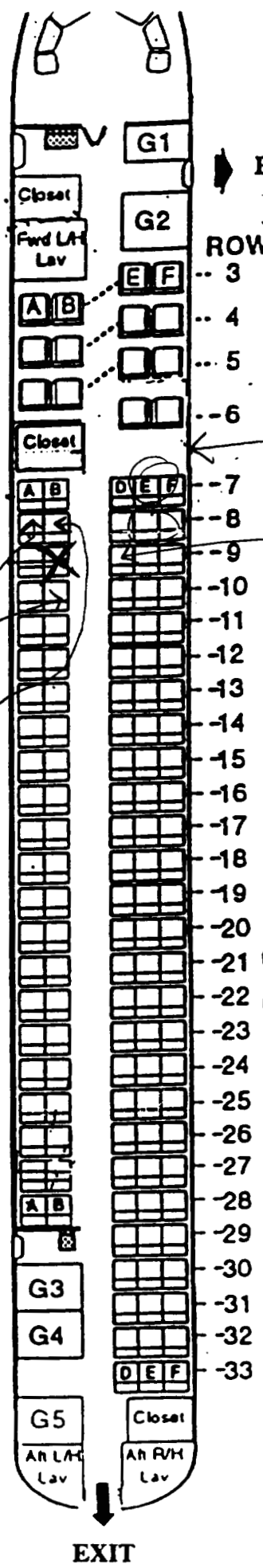
SEAT Number 9B

10B SID BAXTER
 8A Jeff Stewart
 8B Gordon Gasser

Bulkhead
 Cindy Wood 7E or 8E
 Lady with long
 dark hair

OVERWING EXITS
 ROWS 21 and 22

OVERWING EXITS
 ROWS 21 and 22



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Final Thoughts

Thank you for completing the above items. The Safety Board welcomes any comments on what was helpful during the evacuation and what improvements or changes to the design and operation of safety equipment you might suggest. Feel free to discuss items such as the equipment used, instructions given, crew, passengers or any other area you think is important. Use additional paper if needed.

I was very concerned that no warning was given before the crash and no instructions were given after the crash.

I would like to know how and why my seatbelt came open and how and why the overhead bin came down on me if this info is available. I was very concerned no help/instructions were given by the crew after the crash.

and that it took so long for rescue workers to reach us (about 45 min - 1 hr).

The other passengers were incredible in caring for and directing the injured.

Please excuse my writing - I am wearing a Neck brace 24 HRS per day.

NTSB has done a superb job from all I have observed. THANK YOU.